

### REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 1, 15, 36 and 37 have been amended. Claim 3 has been canceled and the limitations of claim 3 have been added to claim 1. The amendments to claims 36 and 37 are supported by at least the description at page 5, lines 8-19 and page 7, lines 3-7. No new matter has been added.

#### § 112 Rejection

Claim 15 was rejected under 35 U.S.C. § 112, 2nd paragraph, as being indefinite. Claim 13 has been amended to address the informalities noted by the Examiner.

#### § 102 Rejections

Claims 1, 2, 5, 6, 25, 27-30, 33 and 36 were rejected under 35 U.S.C. § 102(b) as being anticipated by Holland (US 3,739,792). Applicants respectfully traverse this rejection.

Holland discloses an umbrella that includes a canopy 2 that is supported by flexible ribs 16 and braces 15, and resistive heating elements 112 positioned within channels 119 of the ribs 16. When power is applied to the heating elements 112, heat generated by the heating elements causes heating of the atmospheric air surrounding the heating elements, which heated air is collected under the canopy 2.

The heating elements 112 are not infrared heating elements and do not provide "substantially solely infrared heat," as required by claim 1. Infrared heating elements produce waves having a wavelength that provides passage of the waves through air with very little heating of the air. Infrared waves travel freely until they encounter a solid object. Infrared waves penetrate solid objects to different depths depending on the characteristics of the material as well as the wavelength of the infrared waves. Most solid objects will absorb at least some infrared waves, which absorbed waves excite the electrons of the solid material thereby producing radiant heat that is given off by the solid. Thus, neither the infrared waves nor the infrared heating elements themselves generate radiant heat, as does the resistive heating elements 112 disclosed by Holland. Because Holland fails to disclose infrared heating elements that

provide substantially solely infrared heat, Holland fails to disclose every limitation of claim 1 and the claims that depend from it.

Holland also discloses that the ribs 116 supporting the canopy 2 have a U-shaped channel configuration 119. The resistive heating elements 112 are located in the channels (see column 2, lines 30-36 of Holland). Therefore, Holland fails to disclose "an infrared heating element secured to an outer surface of at least one of the radially extending supports," as required by claim 25, because the resistive heating elements 112 are clearly positioned within the channel 119 and not on an outer surface of the ribs 16. Thus, Holland fails to disclose every limitation of claim 25 and the claims that depend from it.

As noted above, the resistive heating elements 112 disclosed by Holland are intended to cause heating of the atmospheric air adjacent to the undersurface of the umbrella canopy (see column 2, lines 43-46 of Holland). Although the resistive heating elements 112 disclosed by Holland may produce some infrared waves as the byproduct of the resistive heating, the resistive heating elements 112 clearly do not provide "directing infrared waves from the infrared heating element to the objects substantially without heating air positioned between the objects and the heating element," as required by claim 36. Therefore, Holland also fails to disclose every limitation of claim 36.

### § 103 Rejections

Claims 4, 8, 34 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holland in view of EP577196 ('196) and further in view of Phyle (US 5,584,564). Applicants respectfully traverse this rejection.

Holland fails to disclose or suggest every limitation of claims 1 and 25 for at least the reasons stated above. EP '196 and Phyle fail to remedy the deficiencies of Holland as they relate to claims 1 and 25. Specifically, EP '196 and Phyle fail to disclose or suggest an infrared heating element, a heating element that provides substantially solely infrared heating, or an infrared heating element secured to an outer surface of a support member. Therefore, claims 4, 8, 34 and 35 are allowable for at least the reason they are dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Holland in view of Sheppard (US 5,216,948). Applicants respectfully traverse this rejection.

As discussed above, Holland fails to disclose or suggest every limitation of claim 1. Sheppard fails to remedy the deficiencies of Holland as it relates to claim 1. Therefore, claim 7 is allowable for at least the reason it is dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

Claims 3, 9-21, 26, 31, and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holland in view of GB 2381308 (GB '308). Applicants respectfully traverse this rejection.

As discussed above, Holland fails to disclose or suggest every limitation of claims 1 and 25. GB '308 fails to remedy the deficiencies of Holland as it relates to claims 1 and 25. Therefore, claims 3, 26, 31 and 32 are allowable for at least the reason they are dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

Furthermore, Holland discloses an umbrella with resistive heating elements 112 positioned within channels of the support ribs 16. The resistive heating elements 112 do not provide substantially solely infrared heat. As a result, the resistive heating elements 112 heat the atmospheric air surrounding the ribs 16 and the heated atmospheric air is captured within the shroud 2 of the umbrella.

GB '308 discloses an electric patio heater apparatus that is intended to be "used in place of a patio table parasol or . . . free stand" (see the Abstract of GB '308). The heater includes infrared panels 3 and a light fitting 9 that is disposed beneath the heating source but above the patio tabletop surface. A top cover 8 is disposed above the heating panels. However, the top cover 8 is not intended to be a shroud and the patio heater apparatus itself is not intended in any way to serve as an umbrella.

There is no disclosure or suggestion by Holland or GB '308 to include in an umbrella infrared heating elements that provide substantially solely infrared heat. Furthermore, neither Holland nor GB '308 discloses or suggests an infrared heating element mounted to one of the supports of a patio umbrella, as required by claim 9.

The rejection states that Holland is silent whether the heat produced by the resistant heating elements 112 is substantially solely infrared heat. The rejection also states that GB '308 is an example patio heater that produces substantially solely infrared heat and that the patio heater includes an infrared heat source with a visible light source. However, the rejection fails to point out any disclosure or suggestion in either Holland or GB '308 as to how or why those references should be combined. Without such a showing of motivation or suggestion, the rejection fails to provide a prima facie case of obviousness.

GB '308 also teaches away from the use of infrared heating panels with a patio umbrella. GB '308 specifically states that the patio heating apparatus should be used in place of a patio table parasol or that it can free stand. This disclosure not only fails to suggest combining features of the patio heating apparatus with a patio umbrella, but also teaches that such a combination is not needed or desired. Thus, one skilled in the art referring to GB '308 would be discouraged from making the combination the rejection contends would be obvious. Applicants submit that Holland and GB '308 fail to disclose or suggest every limitation of claim 9 and the claims that depend from it for this additional reason.

Claims 37 and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holland in view of EP '196, Phyle, and GB '308. Applicants respectfully traverse this rejection.

As discussed above, Holland fails to disclose or suggest an infrared heating element that is configured to "produce substantially solely waves having wavelengths that are absorbed by solid structures and not by air," as required by claim 37. The resistive heating elements 112 disclosed by Holland are intended to be absorbed by air so as to heat the atmospheric air within the umbrella shroud 2. As noted above, GB '308 teaches away from the combination of an umbrella with the infrared heating panels disclosed by GB '308. EP '196 and Phyle fail to disclose or suggest a patio umbrella having infrared heating elements secured to an outer surface of at least one of the radially extending supports in a generally downward facing direction, and further fail to disclose or suggest infrared heating elements being configured to produce substantially solely waves having wavelengths that are absorbed by solid structures and not by air, as required by claim 37. Therefore, neither Holland, EP '196, Phyle, nor GB '308, alone or in combination, disclose or suggest every limitation of claim 37 and the claims that depend from it.

Claims 22 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holland in view of GB '308 and further in view of Clark (US 5,964,233). Applicants respectfully traverse this rejection. As discussed above, Holland and GB '308 fail to disclose or suggest every limitation of claim 9. Clark fails to remedy the deficiencies of Holland and GB '308 as they relate to claim 9. Therefore, claims 22 and 24 are allowable for at least the reason they are dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

#### Allowable Subject Matter

Applicants kindly thank the Examiner for the indication of allowable subject matter and claims 23, 38 and 40.

#### Applicants' IDS

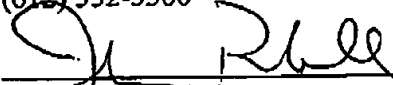
Applicants request the Examiner's review of the Information Disclosure Statement filed on February 19, 2004, and an initialed copy of the IDS.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance. If a phone conference would be helpful in resolving any issues related to this matter, please contact Applicants' attorney listed below at 612-371-5387.

Respectfully submitted,

MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Date: 10 November 2004

  
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Joshua N. Randall  
Reg. No. 50,719  
JNR:njo:ac

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